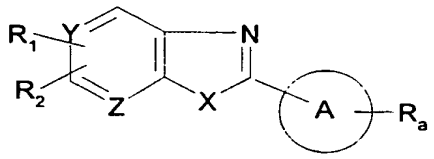
Claims

A compound of formula (I)



(I)

or a salt thereof, or a solvate thereof,wherein;

X represents oxygen, sulphur, or NR_b, wherein R_b represents hydrogen, unsubstituted or substituted C_{1-6}alkyl or unsubstituted or substituted C_{1-6}alkylcarbonyl;

Y and Z each independently represent nitrogen, CH, CR_1 or CR_2;

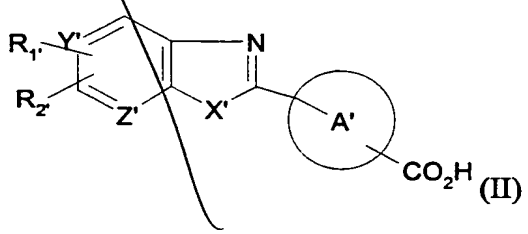
A represents an unsubstituted or substituted aryl group or an unsubstituted or substituted heterocyclyl group;

R_a represents $-C(O)NR_sR_t$ wherein R_s and R_t each independently represent hydrogen, unsubstituted or substituted C_{1-6}alkyl, unsubstituted or substituted C_{3-8}cycloalkyl, unsubstituted or substituted C_{1-6}alkenyl, unsubstituted or substituted aryl, unsubstituted or substituted arylC_{1-6}alkyl, unsubstituted or substituted heterocyclyl or an unsubstituted or substituted heterocyclylC_{1-6}alkyl group, or R_s and R_t together with the nitrogen to which they are attached form a heterocyclyl group;

R_1 and R_2 each independently represents hydrogen, hydroxy, amino, C_{1-6}alkoxy, unsubstituted or substituted aryloxy, unsubstituted or substituted benzyloxy, C_{1-6}alkylamino, di(C_{1-6}alkyl)amino, halo, trifluoromethyl, trifluoromethoxy, nitro, C_{1-6}alkyl, carboxy, alkoxycarbonyl , carbamoyl, C_{1-6}alkylcarbamoyl, or R_1 and R_2 together represent methylenedioxy, -(CH=CH)$_{2-3}$-, carbonyldioxy or carbonyldiamino.

2. A process for the preparation of a compound of formula (I) as defined in claim 1, or a salt thereof or a solvate thereof, which process comprises the amidation of a suitable carboxylic acid with a suitable amine.

3. A process for the preparation of a compound of formula (I) as defined in claim 1, or a salt thereof or a solvate thereof, which process comprises the amidation of a compound of formula (II)



(II)

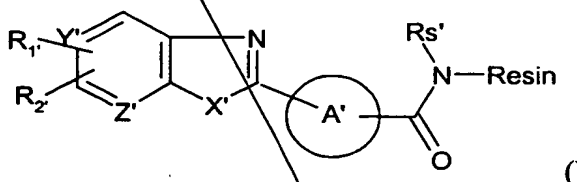
wherein X', Y', Z', A', $R_{1'}$ and $R_{2'}$ each respectively represent X, Y, Z, A, R_1 and R_2 respectively as defined in relation to formula (I) as defined in claim 1 or a protected form thereof with a compound of formula (III)

$$HNR_{s'}R_{t'} \qquad (III)$$

wherein $R_{s'}$ and $R_{t'}$ represent R_s and R_t respectively as defined in relation to formula (I) as defined in claim 1 or a protected form thereof and thereafter, as necessary, carrying out one or more of the following steps;

(i) converting one compound of formula (I) into another compound of formula (I);
(ii) removing any protecting group;
(iii) preparing a salt or a solvate of the compound so formed.

4. A process for the preparation of a compound of formula (I) as defined in claim 1, or a salt thereof or a solvate thereof, which process comprises the cleavage of a compound of formula (VIII) at the N-Resin bond.



(VIII)

wherein X', Y', Z', A', $R_{1'}$, $R_{2'}$, and Rs'each respectively represent X, Y, Z, A, R_1, R_2 and Rs respectively as defined in relation to formula (I) as defined in claim 1.

5. A pharmaceutical composition comprising a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable solvate thereof, and a pharmaceutically acceptable carrier therefor.

6. A method for the treatment and/or prophylaxis of diseases associated with over activity of osteoclasts in mammals which method comprises the administration of an effective non-toxic amount of a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable solvate thereof.

7. A method for the treatment of osteoporosis and related osteopenic diseases in a human or non-human mammal, which comprises administering an effective, non-toxic, amount of a compound of formula (I) according to claim 1 or a pharmaceutically

acceptable salt thereof or a pharmaceutically acceptable solvate thereof, to a human or non-human mammal in need thereof.

8. A method for the treatment of tumours, especially those related to renal cancer, melanoma, colon cancer, lung cancer and leukemia, viral conditions (for example those involving Semliki Forest, Vesicular Stomatitis, Newcastle Disease, Influenza A and B, HIV viruses), ulcers (for example chronic gastritis and peptic ulcer induced by Helicobacter pylori), autoimmune diseases and transplantation, for the treatment and/or prevention of hypercholesterolemic and atherosclerotic diseases, AIDS and Alzheimer's disease, angiogenic diseases, such as rheumatoid arthritis, diabetic retinopathy, psoriasis and solid tumours, in a human or non-human mammal, which method comprises administering an effective, non-toxic, amount of a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof or a pharmaceutically acceptable solvate thereof, to a human or non-human mammal in need thereof.

9. A compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable solvate thereof, for use as an active therapeutic substance.

10. A compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof and/or a pharmaceutically acceptable solvate thereof for use in the treatment and/or prophylaxis of diseases associated with over activity of osteoclasts in mammals.

11. A compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof or a pharmaceutically acceptable solvate thereof, for use in the treatment of and/or prophylaxis of osteoporosis and related osteopenic diseases.

12. A compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof or a pharmaceutically acceptable solvate thereof for use in the treatment of tumours, especially those related to renal cancer, melanoma, colon cancer, lung cancer and leukemia, viral conditions (for example those involving Semliki Forest, Vesicular Stomatitis, Newcastle Disease, Influenza A and B, HIV viruses), ulcers (for example chronic gastritis and peptic ulcer induced by Helicobacter pylori), autoimmune diseases and transplantation, for the treatment and/or prevention of hypercholesterolemic and atherosclerotic diseases, AIDS and Alzheimer's disease, angiogenic diseases, such as rheumatoid arthritis, diabetic retinopathy, psoriasis and solid tumours, in a human or non-human mammal

13. Use of a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable solvate thereof, for the manufacture of a medicament for the treatment and/or prophylaxis of diseases associated with over activity of osteoclasts in mammals.

14. Use of a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable solvate thereof, for the manufacture of a medicament for the treatment and/or prophylaxis of osteoporosis and related osteopenic diseases.

15. Use of a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof or a pharmaceutically acceptable solvate thereof, for the manufacture of a medicament for the treatment of tumours, especially those related to renal cancer, melanoma, colon cancer, lung cancer and leukemia., viral conditions (for example those involving Semliki Forest, Vesicular Stomatitis, Newcastle Disease, Influenza A and B, HIV viruses), ulcers (for example chronic gastritis and peptic ulcer induced by Helicobacter pylori), autoimmune diseases and transplantation, for the treatment and/or prevention of hypercholesterolemic and atherosclerotic diseases, AIDS and Alzheimer's disease, angiogenic diseases, such as rheumatoid arthritis, diabetic retinopathy, psoriasis and solid tumours.

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